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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/549,462

08/08/2006

Brian Tierney

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EXAMINER

HO, ANTHONY

ART UNIT

PAPER NUMBER

2815

MAIL DATE

DELIVERY MODE

06/04/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/549,462	Applicant(s) TIERNEY ET AL.	
	Examiner Anthony Ho	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2007.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.  
     4a) Of the above claim(s) 18-24 is/are withdrawn from consideration. *W3*  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-17 and 25-32 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 08 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u>                                    | 6) <input type="checkbox"/> Other: _____                          |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :1/30/2006, 1/19/2007, 2/12/2007.

**DETAILED ACTION**

***Election/Restrictions***

Claims 18-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on May 7, 2007.

Applicant's election with traverse of claims 1-17 and 25-32 in the reply filed on May 7, 2007 is acknowledged. The traversal is on the ground(s) that group I and II do not lack unity of invention. This is not found persuasive because examiner has shown in the previous office action that group I and II lack the same or corresponding special technical features for the following reason: Woo et al (US PUB 2001/026878) discloses an optical device comprising an anode; a cathode comprising barium, strontium or calcium; and a layer of organic semiconducting material between the anode and the cathode wherein a layer of hole transporting and electron blocking material is located between the anode and the layer of organic semiconducting material.

The requirement is still deemed proper and is therefore made FINAL.

***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on January 30, 2006 was filed after the mailing date of the instant application on August 8, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

The information disclosure statement (IDS) submitted on January 19, 2007 was filed after the mailing date of the instant application on August 8, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

The information disclosure statement (IDS) submitted on February 12, 2007 was filed after the mailing date of the instant application on August 8, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Specification***

The disclosure is objected to because of the following informalities: Please foreign priority in the beginning of the application.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5-16, and 25-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Woo et al (US PUB 2001/0026878).

In re claims 1 and 2, Woo et al discloses an electroluminescent device comprising: an anode; a cathode comprising barium, strontium or calcium; and a layer of organic semiconducting material (paragraphs 0019 and 0059) between the anode and the cathode wherein a layer of hole transporting and electron blocking material (paragraph 0019) is located between the anode and the layer of organic semiconducting material (paragraph 0062 – paragraph 0065).

In re claims 5-9 and 25-26, Woo et al discloses the layer of hole transporting and electron-blocking material comprises triarylamine that has repeat units of a polymer, such as the repeat units of the listed formulae (page 2 – page 3; paragraph 0019; paragraph 0059; paragraph 0062 – paragraph 0065).

In re claims 10-14 and 27-32, Woo et al discloses the layer of organic semiconducting material is a semiconducting polymer which comprises triarylamine that has repeat units of a polymer, such as the repeat units of the listed formulae (page 2 – page 3; paragraph 0019; paragraph 0059; paragraph 0062 – paragraph 0065; table 2).

In re claims 15 and 16, Woo et al discloses a layer of hole injecting material is located between the anode and the layer of hole transporting and electron blocking material, wherein the layer of hole injecting material is poly(ethylene dioxythiophene) (page 2 –

page 3; paragraph 0019; paragraph 0048; paragraph 0059; paragraph 0062 – paragraph 0065).

Claims 1, 2, 4, 10, and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Periyasamy et al (WO 02/31896).

In re claims 1 and 2, Periyasamy et al discloses an electroluminescent device comprising: an anode; a cathode comprising barium, strontium or calcium; and a layer of organic semiconducting material between the anode and the cathode wherein a layer of hole transporting and electron blocking material is located between the anode and the layer of organic semiconducting material (page 26; procedure 1; page 45; table 5).

In re claims 4 and 17, Periyasamy et al discloses the cathode comprises barium and elemental barium (page 26; page 45; table 5).

In re claim 10, Periyasamy et al discloses the layer of organic semiconducting material is a semiconducting polymer (page 26; page 45; table 5).

In re claims 15 and 16, Periyasamy et al discloses a layer of hole injecting material is located between the anode and the layer of hole transporting and electron blocking material, wherein the layer of hole injecting material is poly(ethylene dioxythiophene) (page 26; page 45; table 5).

Claims 1-4 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Naito (EP 1220341).

In re claims 1 and 2, Naito discloses an electroluminescent device comprising: an anode; a cathode comprising barium, strontium or calcium; and a layer of organic semiconducting material between the anode and the cathode wherein a layer of hole transporting and electron blocking material is located between the anode and the layer of organic semiconducting material (paragraph 0069 – paragraph 0072).

In re claim 3, Naito discloses a full color device where in the layer of organic semiconducting material comprises red, green and blue electroluminescent materials (page 12, paragraph 0043-0072 – page 15).

In re claims 4 and 17, Naito discloses the cathode comprises barium and elemental barium (paragraph 0043-0072).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tang et al (US Patent 4,769,292) discloses electroluminescent device with modified thin film luminescent zone. Roitman et al (US Patent 5,629,389) discloses polymer-based electroluminescent device with improved stability. Arai (US Patent 6,249,085) discloses organic electroluminescent device with a high-resistance



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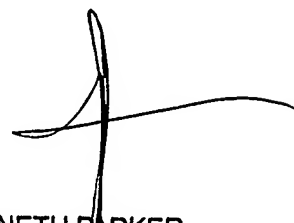
inorganic hole injecting and transporting layer. Chen et al (US Patent 5,998,045) discloses polymeric light-emitting device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Ho whose telephone number is 571-270-1432. The examiner can normally be reached on M-Th: 8:30AM-7:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AH  
May 10, 2007



KENNETH PARKER  
SUPERVISORY PATENT EXAMINER